HAMMETT & EDISON, INC.
CONSULTING ENGINEERS
RADIO AND TELEVISION

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BY FEDERAL EXPRESS

August 26, 1994

Mr. William F. Caton
Office of the Secretary
Federal Communications Commission
1919 M Street, N.W.
Washington, D.C. 20554

Dear Mr. Caton:

On behalf of Hammett & Edison, Inc., Consulting Engineers, three copies of the enclosed comments to Engineering Technology Docket 93-24, concerning the Commission's Rules with regard to the Instructional Television Fixed Service, are enclosed. The deadline for comments to this docket is August 29, 1994, so these comments are timely filed.

Sincerely yours,

William F. Hammett

jd

Enclosures (3)

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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington D.C. 20554

In re Amendment of Part 74 of the Commission's Rules With Regard to the Instructional Television Fixed Service	MM Docket No. 93-24

To: The Commission

Comments of Hammett & Edison, Inc.

1. The firm of Hammett & Edison, Inc., Consulting Engineers, respectfully submits these comments in the above-captioned proceeding relating to the Commission's Rules with regard to the Instructional Television Fixed Service. Hammett & Edison, Inc. is a professional service organization that has provided consultation since 1952 to commercial and governmental clients on communications, radio, television, and related engineering matters.

2. Hammett & Edison, Inc. supports the objectives of the Commission's recent Order and Further Notice of Proposed Rulemaking and supports most of the proposed changes in the Rules. To facilitate the Commission's consideration of our comments, below, we are identifying them respectively with the paragraph numbers used in the Commission's Order adopted June 9, 1994 (FCC 94-148).

3. "*Regarding Paragraph 23 of the Order,*" concerning definition of an area of operation, we urge that no specific mileage be adopted. We have designed a number of ITFS systems that currently serve educational receiving sites at distances substantially greater than 20 miles, due to favorable line of sight conditions from elevated transmitting locations. We agree that it is a

rational distinction to define different areas of operation as being those that could operate co-channel without mutual interference.

4. "*Regarding Paragraph 24 of the Order,*" we favor requiring the use of frequency offset when all affected transmitters are capable of the frequency stability requirements. This use of current technological capabilities clearly would maximize the use of the available spectrum. We would, however, require that any facilities predating the stability requirements and lacking offset capability should be required to convert to offset when the technical costs thereof are borne by a newcoming permittee.

5. "*Regarding Paragraphs 29 and 30 of the Order,*" we concur that abuses of the Commission's processes should be prevented where possible. To this end we would not honor requests for interference protection for receive sites outside the applicant's coverage ability. We would require the applicant to demonstrate that receive sites for which protection is requested can receive service of a certain minimum signal-to-noise ratio in the absence of interference. We would not limit such protection to sites within 35 miles, as that is an entirely arbitrary distance. Instead, we would require a showing of adequate service, in the absence of interference, for any receive sites for which protection is requested.

6. "*Regarding Paragraph 33 of the Order,*" we support the proposed changes in the Rules defining major and minor changes.

7. "*Regarding Paragraph 35 and 36 of the Order,*" we strongly support the Commission's proposal to require valid engineering data to support any assertions by applicants of terrain obstruction. Actual terrain elevation data and all pertinent profiles should be supplied with applications that rely on terrain obstructions to avoid interference. The analysis of such profiles

should be by the best available propagation models. The ITS irregular terrain model in the point-to-point mode is, in our opinion, a satisfactory model.

Hammett & Edison, Inc. has for many years used the TIREM model, developed by the Department of Defense, for the prediction of point-to-point propagation loss and will continue to use this program for engineering system designs, although not for construction permit applications unless recognized by the Commission. Extensive testing that we have done, comparing ITS and TIREM predictions, shows adequate correlation over various types of terrain. We have found that use of the USGS 3-second terrain database provides greater resolution and accuracy than does the NGDC 30-second database, regardless of the propogation loss algorithim used, and we urge the Commission to require the use of the 3-second database, thereby ensuring more closely that consistent engineering material will be submitted by all parties to a proposal.

8. "*Regarding Paragraph 40 of the Order,*" this paragraph assumes that receive sites will all be schools, whereas ITFS systems operated by universities commonly transmit educational programs to high technology and other companies. These, of course, will not be subject to accreditation.

William F. Hammett, P.E.

August 26, 1994